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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,831	11/30/2000	Neal A. Osborn	35451/102	1494

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FOLEY & LARDNER
777 EAST WISCONSIN AVENUE
SUITE 3800
MILWAUKEE, WI 53202-5308

EXAMINER

TUNG, KEE M

ART UNIT PAPER NUMBER

2671

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/726,831

Applicant(s)

OSBORN ET AL.

Examiner

Kee M. Tung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The amendment filed 4/28/05 has been considered in preparing this Office action.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-13 and 15-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crocker et al (5,915,265 hereinafter "Crocker") in view of Nale (5,793,385) and Reddy (5,712,664).

Crocker teaches a computing device (Figs. 1 and 2) comprising a communication bus (either CPU bus 2 or I/O bus 8); a display (7) configured to display in more than one display mode and coupled to the communications bus; a processor (1) coupled to the display and to the communications bus; a display controller (5) coupled to the communications bus; an external RAM (6) is being control by the graphics processor (5); and a main memory (4) coupled to the communications bus, the RAM being controlled by display logic (such function is performed by MC 20, MA 26, or CR1-CR3 (22-24)), the display logic being configured to manage the memory and allocate the memory according to the display mode (based on the display resolution and color in unified memory architecture, col. 2, lines 65-67) and the display logic is configured to change the display mode during operation of an application running on the computing device

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according to changing graphical need of the application, the display modes including at least one of resolution modes and color modes (col. 2, lines 65-67). It is noted that Crocker fails to explicitly suggest or teach "changing of display mode and allocating more memory without reboot the system (during the operation of application)". This is what Nale teaches (col. 1, lines 41-49 and col. 3, lines 13-29). Nale further teaches a UMA system (Fig. 1) comprising a CPU (2); a system logic (4); a graphics controller (6); a display monitor (8); a unified system memory (10); and an address translation (12). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to combine the teachings of Nale into the system of Crocker because Nale is specifically designed to overcome the prior art problem, such as, to reboot the system to dedicate more memory to the graphics controller of Crocker (see, col. 1, lines 20-38). However, the combined system fails to explicitly teach or suggest the memory includes an internal RAM and an external RAM for allocating between the two. This is what Reddy teaches (Fig. 2). Reddy teaches an integrated graphics display memory element includes both a graphics accelerator (110) and an on chip frame buffer (112) and an off chip frame buffer (114). The graphics accelerator distributes and/or controls both the internal and external RAMs. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to combine the teachings of internal and external RAMs of Reddy into the combined system of Crocker and Nale in order to increase the performance of the graphics display system because display data retrieval from on-chip frame buffer is much faster than from external frame buffer and also reduce the on-chip power dissipation that is

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especially critical in handheld, portable, possibly wireless, products where battery life is a primary and essential operational issue; and thus achieving system performance. The integrated solution also allows the display memory size to be expanded by adding external memory so that large displays can be accommodated on an as-needed basis as taught by Reddy (col. 2, lines 30-41 and col. 4, lines 1-20). Therefore, at least claims 1-4 and 15-30 would have been obvious.

As per claims 5-13, Crocker teaches the display mode is dependent on the resolution (could be any resolution) and number of colors (any number of colors) desired (see col. 2, lines 65-67).

Response to Arguments

3. Applicant's arguments with respect to claims 1-13 and 15-30 have been considered but are moot in view of the new ground(s) of rejection.

The rejection has been modified in order to fully consider applicant's amendment.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kee M. Tung whose telephone number is 571-272-7794. The examiner can normally be reached on Tuesday - Friday from 5:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'K. M. Tung', with a long, sweeping horizontal stroke extending to the right.

Kee M Tung
Primary Examiner
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